

AMATEUR SATELLITE REPORT

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Editor: Vern Riportella, WA2LQQ

Contr. Editors:

Eric Rosenberg, WA6YBT

Pete Killingsworth, KD7WZ

Paul Roemer, KG6LC

Managing Editor: Bob Myers, W1XT

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New Russian Satellites Tentatively Slated For January Launch

The long rumored launch of RS-9 and RS-10 are now put in January, 1987 according to a number of European sources. The frequencies and modes of operation of these two new birds turned up recently in an IFRB filing. More recently specific frequencies have been announced. According to PA0DLO, the following are the frequencies and modes for the new Russian satellites:

RS-9	
RS-9 Mode A	
Uplink:	145.860 - 145.900 MHz
Downlink:	29.360 - 29.400 MHz
CW Beacon:	29.402 MHz
RS-9 Robot Transponder	
Uplink:	145.820 MHz
Downlink:	29.320 MHz
RS-10	
RS-10 Mode A	
Uplink:	145.960 - 146.000 MHz
Downlink:	29.460 - 29.500 MHz
Beacons:	29.457 MHz 29.503 MHz
RS-10 Mode K	
Uplink:	21.260 - 21.300 MHz
Downlink:	29.460 - 29.500 MHz
RS-10 Mode T	
Uplink:	21.260 - 21.300 MHz
Downlink:	145.960 - 145.995 MHz
Beacons:	145.957 & 145.997 MHz
RS-10 Robot Transponder	
Uplink:	21.140 MHz
Downlink:	145.957 or 145.997 MHz (beacon frequency)

Modes K and T can operate simultaneously. The telemetry system on RS-10 differs both from RS-9 and all prior RS's. RS-10 appears to have 2 separate 250 word message storage systems which could be used to send messages via one of the beacons using CW.

The anticipated January launch is expected to take place from the northern Russian site called Plesetsk. The plann-

ed orbit will be about 1000 km inclined 83 degrees. The orbital period will be about 105 minutes. It is currently unknown if the two birds will be launched on the same vehicle.

Thanks to PA0DLO and ZS6AKV for these reports.

Extending AO-10 Life; Work Goes On

The AO-10 memory condition continues to deteriorate. Despite this, additional Mode B use may be possible under carefully controlled conditions. QRP use is essential. That means 100 watts ERP or less please. The satellite is currently experiencing eclipses of approximately one hour duration. Use of AO-10 is therefore limited to MA 21 through 199. Use between 200 and 020 is strongly to be discouraged.

The Mode B transponder has occasionally and inadvertently been in its high power mode in recent days. This is not by design but rather an artifact of the testing which continues. The test effort continues in an attempt to find an area of IHU memory which can be used for short routines for, for example, re-orienting the spacecraft to maximize sun angles in the face of seasonal geometry changes.

New NOAA Bird Up and Running; SARSAT Module Makes First Save

NOAA-10 was launched from Vandenberg AFB on 17 September. It was handed over for operations on 20 September. Currently the satellite is in excellent health. Payloads which have been turned on are: Advanced Very High Resolution Radiometer, ARGOS Data Collection and Location System, Microwave Sounding Unit, Earth Radiation Budget Experiment and High Resolution Infrared Sounder. NOAA-10 replaces NOAA-6, which was returned to limited service last December upon the failure of NOAA-8.

Only six days after its launch and less than 24 hours after its SARSAT search and rescue equipment was turned on, NOAA-10 picked up the first distress signal that led to the rescue of four Canadians whose plane crashed in a remote area of Ontario.

RS-5 and RS-7 In Full Sun But Batteries Very Poor

According to PAØDLO, RS-5 and RS-7 have survived the long eclipse period but have sustained further degradation of their batteries. In particular, RS-5's battery appears incapable of holding a charge. When load on the power supply increases, the voltage quickly drops and the transponder shuts off. The intervention of a ground command station is then required to switch it back on. RS-7 was in continuous sunlight between December 6 and January 3. RS-5 will remain in continuous sunlight from December 10 to January 8. A new operating schedule for these satellites was expected to be announced in early January.

NASA Awards Medals To W3IWI and Two Other AMSAT Members

AMSAT President Emeritus Tom Clark, W3IWI, has received a high honor from the National Aeronautics and Space Administration for his work in the field of Very Long Baseline Interferometry. Dr. Clark is a radio astronomer who works with networks of large radio telescopes. By analyzing the signals of remote objects such as quasars at several sites, the position and movements of these sites can be ascertained to a high precision. Tom's work in this area has notably advanced the precision and added significantly to the field of geo-physics and geodesy. He received his commendation and NASA medal on Friday, December 12.

Additionally, AMSAT members Mario Acuna, LU8HBG/W3 and Hugh O'Donnell, W3FUO, have been similarly honored by NASA. Dr. Acuna has a long string of achievements in space exploration and instrumentation having built precision magnetometers for the Mariner and Voyager space probes as well as for the UoSAT OSCAR 9 and 11 spacecraft.

Photographs of the presentation at NASA Headquarters by Dr. James Fletcher, NASA Administrator and Dr. Noel Hinners, Goddard Space Flight Center Director, will be published as soon as possible, hopefully in ASR #141.

Student-Built NUSAT-I Re-Enters Atmosphere

A satellite built by Ogden Utah's Weber State College students and faculty and launched by the shuttle Challenger 20 months ago burned up upon re-entering the atmosphere on December 16. The Northern Utah Satellite, or NUSAT, failed as a technical project but succeeded as a learning experience, school officials said.

"I feel a little bit sad, but a little bit relieved," said Robert Twiggs, director of the college's Center for Aerospace Technology. "It's been a good project."

The satellite entered the atmosphere off the coast of Chile at 10:51 UTC and burned before reaching the ground, said Lt. Gary Turner, spokesman for the North American Air Defense Command in Colorado. The satellite was constructed of aluminum so it would burn up in the atmosphere without raining chunks of metal onto the ground.

NUSAT was launched in April 1985 from Challenger at an altitude of 221 miles. Its mission was to test and calibrate Federal Aviation Administration radar equipment, but the satellite failed because of technical problems. The college is planning a new and improved NUSAT II, expected to be ready to fly by 1988. Twiggs said students finished building the frame and were about half-finished with the new satellite's electronic work.

The significance of NUSAT to AMSAT is not inconsequential. NUSAT pioneered deployment from a shuttle Get Away Special (GAS) can, a technique AMSAT hopes to employ in the future. To that end, a number of AMSAT NA Project Managers are working with NUSAT project officials in connection with several potential shuttle payload packages or GAS can missions. The EDSAT project of Richland Community College in Decatur, Illinois and the Packet Technology Satellite Experiment (PTSE) (also called Housat) in Houston have working relations with NUSAT project officials.

Twiggs had planned to attend AMSAT's Space Symposium in Dallas last November but sent a colleague to represent the project when last minute plan changes aborted his trip. Twiggs presented a report on NUSAT to the American Astronautical Society conference last October 27. (See ASR #137, page 3). AMSAT VP-Engineering Jan King, W3GEY, presented a paper at the same conference.

Short Bursts

- Andy MacAllister, WA5ZIB, of Pearland, Texas, has been named AMSAT Awards Manager. As such, Andy will be responsible to administer the several awards offered by AMSAT and to develop new awards. Congratulations to Andy! Andy writes "OSCAR Notes" and recently began a column for "73 Magazine".
- AMSAT NA notes with sadness the passing of Mac Allison, ZL1TAA, recently. According to ZL1AOX, Mac had been an ardent satellite enthusiast for more than 20 years.

OSCAR Archives Created

by Ross W. Forbes, WB6GFJ

Since the concept of OSCAR was first considered, there has been a tremendous amount of information processed. Notes, photographs, records, papers and other documents important to preserve OSCAR's history could be lost at anytime. In fact, some papers have already been lost! Failure to retain such information can damage the future of the Amateur Satellite program when previous research must be repeated for a future project. Therefore, some form of archives for OSCAR needs to be established.

Since January 1986, those involved with the development of the series of OSCAR satellites have been contacted for their comments and support. Responses received all indicate a definite need for a secure location to preserve important documents, prototypes, and other material related to OSCAR. At the same time, everyone felt the archives must be accessible to interested parties.

To mark the 25th Anniversary of the launch of OSCAR-1, members of the Project OSCAR User's Group are pleased

to formally announce the effort is now in operation to preserve the history of OSCAR. Initial deposits to the archives include the Data Records from OSCAR-2 (from Bill Walters, W6MKE), the AMSAT OSCAR-8 command module used by Bud Schultz, W6CG (donated by AMSAT-NA), records of OSCAR-1 from Chuck Towns, K6LFH, and numerous historical slides from Norm Chalfin, K6PGX.

As items arrive, they are registered according to the donor, the contents are inspected and finally items are registered into the master data base. Storage containers for the volumes of data and many photographs are also now being constructed.

While all of this is taking place, we are negotiating with Foothill College for a secure location to place the entire OSCAR archive collection. However, before we can complete arrangements with the college, a better grasp of the space required by the archives is necessary. When the initial space requirement is determined, a formal agreement with the college will be reached.

The decision to contact Foothill College is the result of their continuous support for OSCAR which dates back to the early days of the program. Since 1963, when Project OSCAR was first provided with the facilities to build and track OSCAR, until today when we celebrate the 25th Anniversary of OSCAR-1, Foothill Community College has always been a strong arm of support. In particular, Dr. Robert Smithwick, W6JZU, an original member of the Foothill College Board of Trustees, and the current Board president, has always provided OSCAR with his positive support. Whenever OSCAR needed help, "Smitty" was there to provide the interface between OSCAR and Foothill College.

Therefore, on the 25th Anniversary of OSCAR-1's launch, in order to preserve OSCAR's history and provide information for future OSCAR spacecraft, we are pleased to announce the formation of the OSCAR Archives. From this date forward, the archives will preserve the history of the program and be able to support the individuals working on future OSCAR satellites with information learned from previous efforts.

For further information, contact: Ross W. Forbes, WB6GFJ, 415 948-5000 (9am - 9pm PST), Post Office Box 1, Los Altos, CA 94023-0001

Bud Schultz Memorial Award Established

by Paul Shuch, N6TX

On the 25th anniversary of the launch of OSCAR-1, the world's first non-government satellite, Project OSCAR is pleased to announce the establishment of an annual "Bud Schultz Memorial Award." Dedicated to the memory of long-time satellite communications enthusiast and command station operator Bud Schultz, W6CG, this award is intended to honor Radio Amateurs making a significant long-term contribution to the Amateur Space Program. The award, to consist of a rotating trophy, as well as a plaque to be retained by each year's recipient, will be presented by the Project OSCAR Board of Directors, at the West Coast VHF/UHF Conference held every May.

Signed nominating petitions, detailing the contributions of the nominee to space research or communications, should be submitted not later than 1 March of each year to: Schultz Award, Project OSCAR, Inc., Post Office Box 1136, Los Altos, CA 94023-1136

Nominations not resulting in awards will be held for consideration in successive years. Neither petitioner nor nominee need be a member of Project OSCAR, AMSAT, or any other organization, though both must be licensed Radio Amateurs involved in the Amateur Space Program.

Selection of each year's recipient shall be at the sole discretion of the Board of Directors of Project OSCAR, Inc., with no individual to be honored more than once. Project OSCAR reserves the right to discontinue issuing the Schultz Award at any time insufficient nominations are on file to indicate a public interest in maintaining the Award.

Project OSCAR has invited Alma Schultz to present the first Schultz Award next May (1987) and we hope she will be able to accept. In subsequent years it is intended that presentations be made by a prior recipient of the Award.

Nomination petitions are hereby solicited for the first annual Schultz Award, to be presented on Saturday, May 2 1987, at the banquet of the next West Coast VHF/UHF Conference, Dunfey Hotel, San Mateo, California. Remember that nominations must be received at the above address on or before 1 March 1987.

Celebration Brings OSCAR Pioneers Together

by Ross W. Forbes, WB6GFJ

December 12th marked the 25th Anniversary of the launch of OSCAR-1, the world's first privately owned satellite. To honor those individuals involved in this historic event, a celebration was held on December 13th at Foothill College, in Los Altos Hills, CA.

Activities began at 11:00 AM with a private luncheon for the original "OSCAR Association" members and invited guests. Of the original participants listed in February 1962 QST, slightly over half of those involved with OSCAR-1 could be located. All of the original OSCAR Association Board of Directors were located.

Original teams members working on the construction and launch of OSCAR-1 that were able to attend included:

Chuck Towns, K6LFH	Chairman of the Board
Walter Read, W6ASH	Liaison for OSCAR
Carl Buchhass, WA6GGW	Data Reduction Team
Harley Gabrielson, K6DS/ex W6HEK	Data Handling Leader
Chuck Smallhouse, WA6MGZ	Design Team
George Christofferson, K6MTZ	Communications Team
Doug Beck, K6ZX/ex WA6QQI	Design Team
Alf Modine, K6TWF	Test Team
Babe Andrews, W6GCG/ex W6LHV	Design Team
Fred Streib, W6NA/ex W6QPM	Communications Team
Mac McClain, K6SPK	Test Team
Nick Marshall, W6OLO	Engineering Team
Lance Ginner, K6GSJ	Test Team
Harry Workman, ex-K6JTC	Secretary
Dick Esneault, W4IJC	Treasurer

Dr. Robert Smithwick, W6JZU longtime OSCAR supporter and President of the Board of Trustees of the Foothill Community College District welcomed the group and was also instrumental in securing the use of the college facilities for the celebration. Representing AMSAT NA were its Chairman of the Board John Browning, W6SP and founding member of AMSAT's Board, Jan King, W3GEY. Representatives from the ARRL included Vice Presidents Jay Holladay, W6EJJ, and Bill Stevens, W6ZM, plus Pacific Division Vice-Director Jim Knochenhauer, K6ITL.

After the private luncheon was held, which gave many of the OSCAR-1 team the first opportunity to see one another in over 20 years, a public session began at 2:00 PM in the Space Science Center and Electronics Museum on campus. Attendees for this afternoon session reached 85 OSCAR enthusiasts. During the three and a half hour program, W6SP and W6EJJ spoke on behalf of AMSAT NA and ARRL, respectively, while WB6GFJ read a letter of congratulations from ZL1MO (IARU Region III Representative) and a telex from Ron Broadbent, G3AAJ, AMSAT-UK Secretary on behalf of AMSAT-UK.

During the program, two important announcements were made. Paul Shuch, N6TX, announced the creation of the

"Bud Schultz Memorial Award" to be presented annually to an individual making a significant, long-term contribution to the Amateur Space Program. Then Ross Forbes, WB6GFJ, announced the formal establishment of the OSCAR archives in order to provide a secure and accessible location for historical paper, photographs, notes and other items important to the entire OSCAR program.

The final portion of the 25th Anniversary Celebration included an historical slide presentation of OSCAR from the prelaunch days, through AMSAT OSCAR 8. The slides were narrated by N6TX, K6GSJ, and W3GEY with additional recollections added by those attending. At the completion of the slides, K6LFH created the OSCAR "catering service" by providing lots of anniversary cake, coffee and tea to attendees.

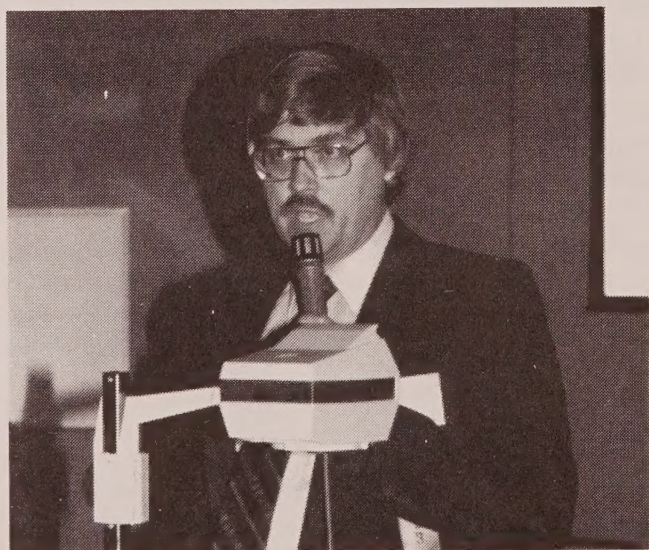
By 5:30 PM, the group dwindled to about 15, so we adjourned to the home of WB6GFJ/WB6QDC and continued until 11:30 PM. In all, a fun day of fond memories, happy reunions and hours of positive satellite discussion was held.

Those unable to attend can contact the AMSAT Video Library (N1CHM) for a copy of the VHS tape made during the celebrations.

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The Radio Amateur Satellite Corporation

Post Office Box 27
Washington, DC 20044
(301) 589-6062



Bob Diersing, N5AHD, spoke on UoSAT telemetry at the Dallas AGM '86.

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